X-pand into the Future

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Eurex Exchange's T7 Disaster Recovery Test Scenario, 15 February 2014

Related Eurex Circulars: 183/11, 218/13

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Content may be most important for:	**Attachments:**
➲ All departments	none

Summary:

Eurex Exchange will offer a public disaster recovery test for Eurex Exchange's T7 trading system on Saturday, **15 February 2014**.

In October 2013, Eurex Exchange published a detailed disaster recovery (DR) concept outlining all prerequisites and network configuration details to ensure continuation of trading in the unlikely event of a disaster leading to the inaccessibility of Eurex Exchange's T7 main data center. For details, please refer to Eurex circular 218/13.

Participation in the disaster recovery test is optional but highly recommended. The test will allow Participants to verify their network and interface configurations in a DR scenario.

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Eurex Exchange's T7 Disaster Recovery Test Scenario, 15 February 2014

Overview

Eurex Exchange will offer a public disaster recovery (DR) test for Eurex Exchange's T7 trading system on Saturday, 15 February 2014.

Scenario summary

Eurex Exchange's installation of the T7 trading system in the Equinix data center is built according to the data center tier 4 standards (ANSI/TIA-942, Telecommunications Industry Association) and is generally considered to be fault tolerant.

The scenario envisioned as the basis for Eurex Exchange's T7 disaster recovery (DR) concept is of such a scale that the whole Equinix data center FR2 facility in Frankfurt becomes inaccessible for physical or virtual access. The scenario includes both halves of the Eurex T7 production matching engine, all production gateways located in Equinix and the customer co-location site.

In such a DR scenario the back-end infrastructure regularly used for Eurex T7 simulation, which resides in a different data center, will be re-used to serve as the DR production back-end.

In the extremely unlikely event of the DR scenario, the switch of the back-end and the transfer of reference data will not be instantaneous, but is expected to take up to four hours.

While most Eurex T7 interfaces will be available in the DR scenario, the following conceptual differences to regular production exist which will have to be accounted for:

Functional

- Order books will be empty after the switch to the DR environment,
- All keys and sequence numbers will be reset and start again from one,
- Trades from the current business day will not be transferred to the T7 DR system (but can still be inquired from the Eurex legacy system),
- Only two partitions will be running in the DR scenario (compared to ten partitions in the regular production environment),
- The original RDF file from the production environment for that day has to be used as the initial RDF file. Further intraday updates will be published by the DR back-end to the Common Report Engine, as usual, into the directory for environment 90 (prod),
- The Eurex Enhanced Order Book Interface will not be available in any DR scenario,
- ETI sessions will have a throttle limit of 30 transactions per second in a DR scenario.

Network

- User IDs, ETI and FIX sessions will be used from production,
- All TCP and UDP ports will be the same as for regular production,
- All Eurex A Stream MDI/EMDI/RDI multicast addresses will be the same as for regular production,
- Eurex A Stream Rendezvous Point (RP) will be the same as for regular production,
- **Eurex MDI/EMDI/RDI Source IP addresses will differ from regular production,**
- **Eurex ETI/Connection Gateway Subnets will differ from regular production,**
- Eurex FIX Gateway A Side Subnet will be the same as for regular production,
- Eurex CRE A Side Subnet will be the same as for regular production.

Please refer to the dedicated document "Disaster Recovery Concept" for a full overview of all Eurex T7 interfaces and details about how they need to be configured for access to the DR scenario.

The document is available on the Eurex website www.eurexchange.com under the link:

Technology > Eurex Exchange's T7 > System Documentation > Release 2.0 > Network Access

Timeline

The DR test scenario will start on Saturday, 15 February 2014 at 14:00 CET. At this point in time, Eurex Exchange will have made the necessary preparations and the former simulation system will have been started as the DR environment.

After the DR test scenario has ended, Eurex Exchange will close the DR environment and bring the regular production system back up again. Participants will be able to use a second time window to verify their connectivity to the Eurex Exchange's T7 production after rolling back from the DR scenario.

In short, the timeline for the DR test is as follows:

Start of DR scenario test	14:00 CET
End of DR scenario test	16:00 CET
Start of production environment connection test window	17:00 CET
End of production environment connection test window	18:00 CET
Continuation of production environment connection test over the weekend (unattended)	18:00 CET

After the production environment connection test window has been closed, Eurex Exchange's T7 trading system with the exception of the FIX gateways will remain online but unattended for the remainder of the weekend.

Participants are requested to test and verify the following mechanisms during the disaster scenario test:

- Join multicast group for market data distribution (MDI, EMDI) and receipt of market data and/or technical heartbeats,
- Connection and login to ETI gateways,
- ETI session logon
- T7 Trader GUI login via DR landing page and receipt of the test message,
- Order and quote management,
- Matching.

The following interfaces or functions will not be available in the DR test scenario:

- FIX Gateways,
- EOBI,
- Eurex clearing system and its interfaces (FIXML),
- EurexOTC trade entry.

Network Details for DR test scenario

Due to the nature of the distributed Eurex T7 architecture, interfaces will be configured in varying ways.

Eurex T7 interfaces whose production infrastructure is solely located in the Equinix data center FR2 will switch to the simulation infrastructure and will need to be accessed via simulation network addresses.

Other Eurex T7 interfaces whose production infrastructure is distributed across both data centers will be able to continue to use the existing production infrastructure in the DR data center.

In some cases, further changes will need to be made by Eurex, e.g. to re-balance the number of ETI HF gateways with the number of ETI LF gateways, according to different requirements by a DR scenario compared to regular simulation.

The table on the next page summarizes all available interface connection details in a DR scenario:

Interface	Connection option	URL / IP addresses		Ports	Protocol
GUI Landingpage	Internet	http://webgui.eurexchange.com/emergency/index.html		80	TCP/IP
	Leased line	http://193.29.93.173/emergency/index.html http://webgui.vpn.eurexchange.com/emergency/fqdn.html		80	TCP/IP
Java WebStart	Internet	193.29.90.190	n/a	80 / (443)	TCP/IP
	Leased line	193.29.93.173	193.29.93.160/28	80 / (443)	TCP/IP
GUI (Crypto)Proxies	Internet	193.29.90.235 192.29.90.236	193.29.90.224/27	80	TCP/IP
	Leased line - side A	193.29.89.225	193.29.89.224/28	80 / 8089	TCP/IP
	Leased line - side B	193.29.95.225	193.29.95.224/28		

Eurex ETI	Gateway type	IP subnets Side A	Side B	Ports	Protocol
	HF trading gateways	193.29.89.129, 192.29.89.130	193.29.89.161, 193.29.89.162	19006	TCP/IP
	LF trading gateways	193.29.89.65, 193.29.89.66, 193.29.89.67, 193.29.89.68	193.29.89.97, 193.29.89.98, 193.29.89.99, 193.29.89.100		
	Connection gateways	193.29.89.65	193.29.89.97	19008	TCP/IP

Eurex FIX Gateway	Connection option	IP addresses	IP subnets	Ports	Protocol
	Leased line - side A	90.150.253.31	90.150.253.0/24	Individually assigned	TCP/IP

Eurex MDI	Description	Multicast groups Service A	Ports US-allowed products	Ports US-restricted products
	Multicast groups	224.0.50.64 - 74	59000	59032
	Source networks	193.29.89.192/28	-	-
	Rendezvous point Service A only	193.29.91.252/32	-	-
	Technical heartbeat Service A only	-	59086	-

Eurex EMDI	Description	Multicast groups Service A	Ports US-allowed products	Ports US-restricted products
	Multicast groups	224.0.50.0 - 63	Snapshot: 59000 Incremental: 59001	Snapshot: 59032 Incremental: 59033
	Source networks	193.29.89.0/27	-	

Eurex RDI	Description	Multicast groups Service A	Ports
	Multicast groups Snapshot data	224.0.50.0	59098
	Multicast groups Incremental data	224.0.50.1	59099
	Source networks	193.29.89.192/28	-

Common Report Engine	Connection option	Gateway IP addresses	IP subnets	Ports Public	Ports Particip.
	Internet	193.29.90.129	n/a	2221	2222
	Leased line - side A	193.29.90.65	193.29.90.64/27		

Eurex EOBI	Connection option	IP addresses	IP subnets	Ports	Protocol
	not available	none	none	none	-

Contacts

The following hotlines will be available for any questions you may have during the connection test or start of production:

- Technical Key Account Manager via VIP number
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If you have any questions or require further information on Eurex Exchange's T7, please contact your Markets Services Key Account Manager.

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